Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) System of artificial intelligence for classification of events giving rise to geophysical recordings, comprising several independent processing branches merged by a high level decisional system, wherein these branches are:

a neuro-fuzzy classifier, making its decision from high level properties of events and lower level parameters extracted from the signals by procedures of a signal processing type;

a fuzzy expert system, taking a decision in an independent way from the same information, and able to explain its decision to a user through an intermediary of rules selected by order of applicability to the events being processed;

a neural network with local connections and shared weights, constituted of banks of non-linear adaptable filters, itself extracting the relevant information for time-frequency representations from signals corresponding to the events,

and wherein these branches configure themselves automatically by statistical learning on a database of said events.

~~, objects or situations from signals and from discriminant parameters produced by models, characterised in that it comprises at least one processing branch comprising a fuzzy expert system (FES) taking a decision according to high level properties and discriminant parameters of lower level extracted from signals by signal processing type procedures, and capable of explaining its decision to the user through the intermediary of rules selected by order of applicability.~~

2. (Original) System according to claim 1 in which, in the fuzzy expert system (FES), a gradient decrease is carried out on the parameters:

- $x = y/\sigma$

- $s = \ln/2\sigma^2)$
- $r = \ln(\rho)$
- d

with:

- y: position of fuzzy sets of premises
- σ: width of fuzzy sets of premises
- ρ: weights of rules
- d: degree of activation of each class for each rule.

3. (currently amended) System according to claim 1, in which the high level properties are the localisation, the magnitude, the time and the date. ~~which is a multi-expert system constituted of at least two independent processing branches, organising themselves automatically through statistical learning on data bases, having particular properties and merged by a high level decisional system.~~

4-7. (canceled)

Amendments to the Abstract:

Please replace the Abstract with the following replacement Abstract:

ABSTRACT

The present invention relates to a system of artificial intelligence for the classification of events, objects or situations from signals and discriminant parameters produced by models comprising at least one processing branch comprising a fuzzy expert system making a decision according to high level properties and discriminant parameters of low level extracted from signals by signal processing type procedure, and capable of explaining its decision to the user through the intermediary of rules selected by order of applicability.

~~Figure 1~~